

HyImpulse supported by European Space Agency (ESA) Boost! Programme

Launch service provider HyImpulse has received €6.5 million to advance the development of its innovative hybrid propulsion technology for its orbital launch vehicle.

The funding, granted under ESA Boost! Programme to assist innovative companies in advancing new launch technologies, comes from the UK Space Agency (€4m) and the DLR (€2.5m). It enables HyImpulse to accelerate the expansion of its UK operations in preparation for a first launch.

These funds will aid in further developing and testing the hybrid propulsion technology and in planning launch facilities and operations in partnership with SaxaVord Spaceport in the Shetland Islands. HyImpulse has also incorporated a joint venture, Carbon Launch Systems, with Adamant Composites for the production and qualification of ultra-lightweight, liner-less, carbon fibre liquid oxygen tanks.

HyImpulse are due to launch their technology demonstrator, a sounding rocket from Southern Launch, Australia in Q1 2024. This will flight qualify the hybrid propulsion technology which will be the core building block of the orbital launch vehicle, SL1.

SL1 is a three-stage rocket powered by a solid paraffin fuel and liquid oxygen. This vehicle will be about 30m tall and 2m diameter capable of carrying 400kg of payload to a 500km sun-synchronous orbit. The hybrid propulsion system reduces the complexity of manufacturing, significantly lowering costs and reduces the number of failure modes, increasing reliability. This approach is novel at the scale of a commercial launch service and is made possible by HyImpulse's proprietary paraffin formulation and motor design. HyImpulse has regularly been testing hybrid motors in Shetland, near to the first intended launch site, since 2021 and by 2030 aims to achieve carbon neutral operations through use of a synthesised paraffin fuel using renewable energy sources.

Christian Schmierer, co-CEO of HyImpulse said:

"Commencing this next phase of orbital launch vehicle development, launching our first sounding rocket demonstrator and rapidly expanding our UK operation are very significant milestones for 2024 and beyond. We have a good history of working with Saxa Vord and Adamant Composites and look forward to this next phase of these relationships.

With this new support received through ESA we will make significant progress on our unique hybrid launch service which will be a game changer for reducing the cost of access to space, getting small satellites where they need to go safely and on-demand."

Matt Archer, Director of Launch, UK Space Agency said:

"Our investment in HyImpulse demonstrates our continued commitment to make the UK Europe's leading destination for launch by encouraging the development of launch companies."

"This contract will help HyImpulse to prepare for their first launch from SaxaVord Spaceport, enhancing our launch capability, creating high skilled jobs and supporting Government's vision for the UK to be Europe's most attractive launch destination by 2030."

ESA's Commercial Services Manager and Technical Officer for Boost!, Jørgen Bru, said:

"HyImpulse has made remarkable progress towards bringing hybrid propulsion to operations and ESA is dedicating further support to the orbital launch services under development."

Scott Hammond, SaxaVord Spaceport deputy CEO, said:

"We are delighted that the UK Space Agency has awarded this funding to our client to help them progress towards launch from our site in Unst, the UK's first vertical launch spaceport."

Antonios Vavouliotis, Director of Adamant Composites and Carbon Launch Systems, said:

"This funding from the UK Space Agency will play a pivotal role in advancing our groundbreaking cryogenic tank technology, empowering our partner HyImpulse to make substantial headway towards offering an affordable and reliable launch service for small satellites. We are thrilled to embark on this exciting new stage of our development."

About HyImpulse

HyImpulse is a launch services provider based in Baden-Württemberg, Germany. Founded with the goal to revolutionize access to space, HyImpulse's Small Launcher, SL1, is powered by unique and proprietary hybrid propulsion systems. This disruptive technology enables HyImpulse to offer affordable, frequent, responsive, and safe access to space for small satellites and spacecrafts. SL1 has a payload capacity of 400 kg to a 500 km SSO.

For more information about HyImpulse Technologies and its products, please visit [HYIMPULSE TECHNOLOGIES \(hyimpulse.de\)](https://www.hyimpulse.de).

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About SaxaVord Spaceport

SaxaVord Spaceport (SaxaVord) is the UK's first vertical satellite launch facility and ground station located at Lamba Ness in Unst, Shetland. Given Unst is the UK's highest point of latitude, SaxaVord offers customers a geographic competitive advantage enabling unrivalled payloads per satellite, launch site operations, a network of ground stations, as well as in-orbit data collection and analysis.

SaxaVord has received endorsement from the UK Space Agency's (UKSA) SCEPTRE Report and formed industry-leading partnerships. It has also been chosen to host the UKSA's UK Pathfinder launch, which will be delivered by Lockheed Martin and ABL Systems.

About Adamant Composites

Adamant Composites is a Greek company specializing in the development of advanced composites for aerospace, industrial and defense applications. Company's expertise lies in the design and manufacturing of composite structures and the engineering of nano-enabled materials in applications such as batteries, storage tanks, UAVs airframes, deployable structure subsystems, structural components and ground support equipment for satellites and launchers. With a team of highly skilled engineers and technicians, the company is committed to delivering innovative solutions that meet the demanding requirements of its customers.

For more information about Adamant Composites and its products, please visit [ADAMANT.COMPOSITES \(adamant-composites.com\)](http://ADAMANT.COMPOSITES(adamant-composites.com)).